AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A novel photovoltaic solar cell comprising:

at least one absorber layer, and

at least one doped window layer having at least two sub-layers, wherein the first sub-window layer is adjacent the absorber layer and forms a desirable junction with the absorber layer and wherein the second sub-window layer is adjacent the first sub-window layer and has high optical transmission;

wherein the absorber layer of the photovoltaic cell comprises a thin film silicon (tf-Si) alloy based solar cell including at least one of amorphous silicon (a-Si:H) based solar cell, amorphous silicon germanium (a-$Si_{(1-x)}Ge_x$:H) based solar cell, nanocrystalline silicon (nc-Si:H) based solar cell, microcrystalline silicon (μc-Si:H) based solar, polycrystalline silicon (poly-Si:H) based solar cell, or other combinations and mixtures thereof;

the first and second sub-window p-type ~~sub-window~~ layers ~~having substantially the same chemical composition but having different bandgaps,~~ being comprised of one or more of thin film silicon based materials including at least one of amorphous silicon, protocrystalline silicon, nanocrystalline silicon, microcrystalline silicon, polycrystalline silicon (poly-Si:H), or other combinations and mixtures thereof;

wherein the second sub-window p-type layer has a transparency greater than ~~bandgap wider than the bandgap of~~ the first sub-window p-type layer, and wherein there is a minimal mismatch between the bandgap of the first sub-window p-type layer and the bandgap of the absorber layer that is adjacent to the first sub-window p-layer.

2. - 10. Cancelled

11. (Original) The solar cell of claim 1, further comprising a substrate selected from at least one of: glass, metal or plastic.

12. (Previously Presented) The solar cell of claim 11, further comprising a transparent conductive oxide layer adjacent the second sub-window-layer.

13. Cancelled

14. (Original) The solar cell of claim 1, further comprising a buffer semi-conductor layer between the absorber-layer and the first sub-window-layer.

15. - 74. Cancelled

75. (Previously Presented) The solar cell of claim 1, the first sub-window layer being formed by deposition at a first temperature, and the second sub-window being formed by deposition at a second temperature that is lower than the first temperature.

76. (Previously Presented) The solar cell of claim 1, the sub p-layer adjacent to the i-layer being formed after the i-layer is formed.

77. (Currently Amended) ~~The solar cell of claim 11~~, A novel photovoltaic solar cell comprising:

at least one absorber layer, and

at least one doped window layer having at least two sub-layers, wherein the first sub-window layer is adjacent the absorber layer and forms a desirable junction with the absorber layer and wherein the second sub-window layer is adjacent the first sub-window layer and has high optical transmission;

wherein the absorber layer of the photovoltaic cell comprises a thin film silicon (tf-Si) alloy based solar cell including at least one of amorphous silicon (a-Si:H) based solar cell, amorphous silicon germanium (a-$Si_{(1-x)}Ge_x$:H) based solar cell, nanocrystalline silicon (nc-Si:H) based solar cell, microcrystalline silicon (μc-Si:H) based solar, polycrystalline silicon (poly-Si:H) based solar cell, or other combinations and mixtures thereof;

the first and second sub-window p-type layers being comprised of one or more of thin film silicon based materials including at least one of amorphous silicon, protocrystalline silicon, nanocrystalline silicon, microcrystalline silicon, polycrystalline silicon (poly-Si:H), or other combinations and mixtures thereof;

wherein the second sub-window p-type layer has a transparency greater than the first

sub-window p-type layer, and wherein there is a minimal mismatch between the bandgap of the first sub-window p-type layer and the bandgap of the absorber layer that is adjacent to the first sub-window p-layer; and,

wherein the substrate comprises a stainless steel metal, the first and second sub-window layers comprise a-Si:H, the absorber layer comprises a-SiGe:H, and the n-layer comprises a-Si:H.

78. (Previously Presented) The solar cell of claim 77, the first sub-window layer being formed by deposition at a first temperature, and the second sub-window being formed by deposition at a second temperature that is lower than the first temperature.